What is claimed is:

1. An apparatus for connecting at least one optical line terminal and a plurality of optical network units in an optical distribution network, the apparatus including a splitter adapted to communicate with the optical line terminal via a first communication channel and further adapted to communicate with the plurality of optical network units via a separate second communication channel for each optical network unit, the splitter being further adapted to pass through all communication signals received from the optical line terminal to all the optical network units and to pass through all communication signals received from any one of the plurality of optical network units to the optical line terminal, the apparatus further characterized in that:

the splitter is adapted to pass through all communication signals received from any one of the plurality of optical network units to all optical network units.

2. The apparatus according to claim **1**, wherein the splitter is adapted for reflecting all communication signals received from any one of the plurality of optical network units to all the optical network units.

3. The apparatus according to claim **2**, wherein the splitter comprises a highly reflective mirror.

4. The apparatus according to claim **3**, wherein the highly reflective mirror is selected from the group consisting of a gold-plated polished connector and a fiber Bragg grating.

5. An optical distribution network including at least one optical line terminal and a plurality of optical network units, the network being arranged such that all communication signals received from the optical line terminal are passed through to all the optical network units and such that all communication signals received from any one of the optical network units are passed through to the optical line terminal, the optical distribution network comprising:

at least one splitter connectable to the at least one optical line terminal and the plurality of optical network units, the at least one splitter adapted to pass through all communication signals received from any one of the optical network units to all optical network units.

6. The optical distribution network according to claim **5**, wherein the at least one optical line terminal is adapted to communicate with a second network.

7. The optical distribution network according to claim **6**, wherein the second network is a network selected from the group consisting of an internet or an intranet.

8. The optical distribution network according to claim **5,** wherein the at least one splitter is adapted to communicate with the at least one optical line terminal via a first communication channel and further adapted to communicate with the plurality of optical network units via a separate second communication channel for each optical network unit.

9. The optical distribution network according to claim **8**, wherein the at least one optical line terminal comprises a router adapted for connection to the first communication channel.

10. The optical distribution network according to claim **9**, wherein the router is connectable to a plurality of splitters via associated first communication channels.

11. A method for communication in a passive optical network, the passive optical network for connecting an optical line terminal with a plurality of optical network units based on time division multiple access and comprising at least one splitter, the method comprising:

initializing communication by one of the plurality of optical network units by sending an initialization message using a predetermined part of the bandwidth available from the optical line terminal; and

monitoring the received signal for messages from other ones of the plurality of optical network units for detecting collision of data traffic and, if collision occurs, delaying transmission of further packets by a predetermined amount of time such that no overlap of transmissions occur.

12. The method according to claim **11**, further comprising:

measuring the time between sending a message by an optical network unit and receiving that same message by that same optical network unit; and

using the measured time to determine the proper start time for transmitting in an assigned time slot.

13. The method according to claim **11**, wherein the step of initializing comprises initializing the plurality of optical network units in a predetermined order.

14. The method according to claim **11**, further comprising the step of, at each of the plurality of optical network units, receiving a control message comprising a maximum available bandwidth amount for each of the plurality of optical network units.

15. An apparatus for connecting at least one optical line terminal and a plurality of optical network units in an optical distribution network, the network being arranged such that all communication signals received from the optical line terminal are passed through to all the optical network units and such that all communication signals received from any one of the plurality of optical network units are passed through to the optical line terminal, the apparatus comprising:

a splitter adapted to pass through all communication signals received from any one of the plurality of optical network units to all optical network units.

16. The apparatus according to claim **15**, wherein the splitter is adapted to communicate with the optical line terminal via a first communication channel and further adapted to communicate with the plurality of optical network units via a separate second communication channel for each optical network unit.

17. The apparatus according to claim **15**, wherein the splitter is adapted for reflecting all communication signals received from any one of the plurality of optical network units to all the optical network units.

18. A method for connecting at least one optical line terminal and a plurality of optical network units in an optical distribution network, the network being arranged such that all communication signals received from the optical line terminal are passed through to all the optical network units and such that all communication signals

received from any one of the plurality of optical network units are passed through to the optical line terminal, the method comprising:

passing through all communication signals received from any one of the plurality of optical network units to all optical network units.

19. The method according to claim **18**, further comprising the step of reflecting all communication signals received from any one of the plurality of optical network units to all the optical network units.